WHAT IS CLAIMED IS:

1. A gas sensor, comprising:

an electrolyte layer having disposed on opposite sides thereof a first electrode and a second electrode; and

an insulating layer that is in intimate contact with the second electrode, wherein the insulating layer comprises alumina and frit.

2. The gas sensor as in Claim 1, further comprising a heater disposed adjacent to the insulating layer.

3. The gas sensor as in Claim 1, further comprising a protective insulating layer disposed adjacent to the first electrode.

4. The gas sensor of Claim 1, wherein the frit comprises a material selected from the group consisting of alkaline earth metals and rare earths, and oxides, alloys, and combinations comprising at least one of the foregoing materials.

5. The gas sensor of Claim 1, wherein the insulating layer comprises up to about 10 wt% frit.

6. The gas sensor of Claim 5, wherein the insulating layer comprises about 2 wt% to about 8 wt% frit.

7. The gas sensor of Claim 6, wherein the insulating layer comprises about 4 wt% to about 6 wt% frit

8. The gas sensor of Claim 1, wherein the insulating layer has a resistivity of about 700 MΩ•cm or greater at about 800°C.

9. The gas sensor of Claim 8, wherein the insulating layer has a resistivity of about 1,000 MΩ•cm or greater at about 800°C.

10. The gas sensor of Claim 9, wherein the insulating layer has a resistivity of about 1,500 MΩ•cm or greater at about 800°C.

11. The gas sensor of Claim 1, wherein the frit comprises a material selected from the group consisting of lanthanum, cerium, praseodymium, neodymium, samarium, europium, gadolinium, dysprosium, boron, silicon, scandium, yttrium, aluminum, and oxides, alloys, and combinations comprising at least one of the foregoing materials.

12. The gas sensor of Claim 11, wherein the frit comprises equal to or greater than about 35 mol% silica.

13. The gas sensor of Claim 12, wherein the frit comprises about 35 mol% to about 70 mol% silica, 0 mol% to about 30 mol% boria, 0 mol% to about 26 mol% alumina, 0 to about 25 mol% yttria, 0 to about 26 mol% RE_2O_3 where RE_2O_3 is La_2O_3, three valent rare earth oxides, or combinations comprising at least one of the foregoing RE_2O_3s.

14. The gas sensor of Claim 13, wherein the frit comprises about 20 mol% to about 25 mol% alumina, about 2 mol% to about 8 mol% yttria, about 20 mol% to about 25 mol% lanthana, and 0.5 mol% to about 10 mol% boria.

15. The gas sensor of Claim 14, wherein the frit comprises about 4 mol% to about 13 mol% boria, 12 mol% to about 27 mol% alumina, about 3 mol% to about 13 mol% yttria, and 0 mol% to about 20 mol% scandia.

16. The gas sensor of Claim 13, wherein the frit comprises less than about 0.25 mol%, based upon the total mol% of elements selected from the group consisting of lead, phosphorus, barium, calcium, magnesium, strontium, lithium, sodium, potassium, and combinations comprising at least one of the foregoing elements.

17. The gas sensor of Claim 16, wherein the frit comprises less than about 0.025 mol% of the elements

18. A method of making a gas sensor, comprising:

disposing a first electrode and a second electrode on opposite sides of an electrolyte layer;

forming an insulating layer comprising alumina and frit;

disposing the insulating layer adjacent to the second electrode to form a green sensor; and

heating the green sensor to a temperature sufficient to sinter the electrolyte layer and the insulating layer.

19. The method of Claim 18, further comprising disposing a heater adjacent to the insulating layer prior to the heating.

20. The method of Claim 18, further comprising disposing a protective insulating layer adjacent to the electrolyte layer prior to the heating.

21. The method of Claim 18, wherein the frit comprises material selected from the group consisting of alkaline earth metals and rare earths, and oxides, alloys, and combinations comprising at least one of the foregoing materials.

22. The method of Claim 18, wherein the insulating layer comprises up to about 10 wt% frit.

23. The method of Claim 22, wherein the insulating layer comprises about 2 wt% to about 8 wt% frit.

24. The method of Claim 23, wherein the insulating layer comprises about 4 wt% to about 6 wt% frit.

25. The method of Claim 18, wherein the insulating layer has a resistivity of about 700 MΩ•cm or greater at about 800°C.

26. The method of Claim 25, wherein the insulating layer has a resistivity of about 1,000 MΩ•cm or greater at about 800°C.

27. The method of Claim 26, wherein the insulating layer has a resistivity of about 1,500 MΩ•cm or greater at about 800°C.

28. The method of Claim 18, wherein the frit comprises a material selected from the group consisting of lanthanum, cerium, praseodymium, neodymium, samarium, europium, gadolinium, dysprosium, boron, silicon, scandium, yttrium, aluminum, and oxides, alloys, and combinations comprising at least one of the foregoing materials.

29. The method of Claim 28, wherein the frit comprises a equal to or greater than about 35 mol% silica.

30. The method of Claim 29, wherein the frit comprises about 45 mol% to about 60 mol% silica, about 10 mol% to about 25 mol% alumina, up to about 25 mol% strontia, up to about 45 mol% yttria, about 20 mol% to about 30 mol% lanthana, and up to about 40 mol% neodymium.

31. The method of Claim 30, wherein the frit comprises about 20 mol% to about 25 mol% alumina, about 2 mol% to about 8 mol% yttria, about 20 mol% to about 25 mol% lanthana, up to about 10 mol% strontia, and up to about 25 mol% neodymium.

32. The method of Claim 31, wherein the frit comprises less than about 0.25 mol%, based upon the total mol% of elements selected from the group consisting of lead, phosphorus, barium, lithium, sodium, and combinations comprising at least 1 of the foregoing elements.

33. The method of Claim 32, wherein the frit comprises less than about 0.025 mol% of the elements.

34. A ceramic part comprising:

an insulating layer affixed to a substrate wherein the insulating layer comprising Al_2O_3 particles; and

a glass comprising about 35 to about 70 mole percent SiO_2, 0 to about 30 mole percent B_2O_3, 0 to about 26 mole percent Al_2O_3, 0 and 25 mole percent Y_2O_3, and about 10 to about 26 mole percent RE_2O_3, wherein RE_2O_3 is selected from the group consisting of La_2O_3, three valent rare earth oxides, and combinations comprising at least one of the foregoing.

35. The ceramic part of Claim 34, wherein the glass is nonconductive.

36. The ceramic part of Claim 34, wherein the glass is utilized as a seal between two or more substrates.

37. The ceramic part of Claim 34, wherein the glass further comprises a material having a thermal expansion coefficient of about 60 x 10^{-7} K^{-1} to about 102 x 10^{-7} K^{-1}.

38. The ceramic part of Claim 34, wherein the glass is utilized as an insulating covering over a conducting metal formed on the surface of a substrate.

39. The ceramic part of Claim 34, wherein the glass is utilized as an insulating covering over a platinum strip formed on the surface of the substrate.